

CLAIMS

1. Plate-type heat exchanger comprising a number of stacked dividing plates (11) of roughly uniform thickness (e), between them defining at least one first passage (33), and at least one fin (35; 45) arranged in this at least one first passage (33), characterized in that the minimum thickness (e') of the said fin is greater than 0.8 times the thickness (e) of each of the dividing plates (1) defining the said passage (33).
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2. Heat exchanger according to Claim 1, characterized in that the ratio of the minimum thickness (e') of the said fin (35; 45) to the thickness (e) of each of the dividing plates (11) defining the said passage (33) is greater than 1, preferably greater than 1.5, more preferably still, greater than 2.
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3. Heat exchanger according to Claim 1 or 2, characterized in that the thickness (e) of each of the said dividing plates (11) is between 0.6 mm and 2 mm.
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4. Heat exchanger according to one of Claims 1 to 3, characterized in that the dividing plates (11) are flat and rectangular.
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5. Heat exchanger according to any one of Claims 1 to 4, characterized in that the said fin (45) is produced by extrusion.
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6. Heat exchanger according to any one of Claims 1 to 4, characterized in that the said fin (45) is produced by machining from a thick flat sheet.
- 35 7. Heat exchanger according to any one of Claims 1 to 6, characterized in that it comprises at least one second passage and at least one fin arranged in this at least one second passage, the minimum thickness of the

said fin being less than 0.8 times the thickness of each of the dividing plates.

8. Air separating apparatus comprising at least one column and at least one vaporizer-condenser which is an exchanger according to one of Claims 1 to 7.

9. Air separating apparatus according to Claim 8, comprising two columns connected thermally to one another through an exchanger according to one of Claims 1 to 7.

10. Use of a plate-type exchanger according to any one of Claims 1 to 7 for reheating and/or vaporizing oxygen or an oxygen-rich fluid which in particular has a number of oxygen molecules with respect to the total number of molecules greater than 60%.